



شركة ميرك العربية السعودية
MEIRC Saudi Arabia

Cutting Tools

Duration 5 Days

Introduction

The object of this course is to provide machine shop technicians, improvers and beginners in the branches of machine tools with rotary primary cutting motion (Turning, Milling, Drilling, Grinding, and Shaping).

It is safe to say that the beginner participant who will take the trouble to study this course text will undoubtedly carry out his duties with greater confidence and ability than he otherwise would do.

Who Should Attend

Engineers, scientists, aides and technicians.

Course Objectives

Upon completion of this chapter, the participant will be able to:

- identify the different cutting tools used in turning operation by names and their use;
- Explain the principles of metal cutting elements;
- identify material and its properties of each type of cutting tool;
- Explain why continuous chip formation differs from short chip formation; identify forces acting at this cutting point;
- Calculate speed and feed of cutting tools of different materials.

Course Outline

1. Lathe Cutting Tools

- Introduction to Cutting Tools
- The Lathe
- Turning Operation
- Types of Lathe Cutting Tools
- Cutting Tool Materials

2. Milling Machine Cutters

- The Horizontal Mill
- Cutters Used on Horizontal Arbor
- Tooth Shape on Milling Cutters
- Cutter Rotation
- Vertical Milling Attachment
- Vertical Milling Cutters End Mills
- Stub Arbor and Large Diameter Cutters
- Spindle Speed and Feed

3. Files

- Shapes
- Teeth
- Grade of Cut of a File



- Cuts of Files
- Cross-section of Files
- Use of Files
- File Handles and Safety
- Review Questions
- 4. Saw Blades**
 - The Hacksaw
 - The Hacksaw Blades
 - Sizes
 - Teeth Set
 - Parts
 - Materials
 - Cutting Speeds
- 5. Chisels**
 - Material
 - Hot Cold Chisel
 - Angles
 - Shapes
 - Uses
 - Standard Sizes
- 6. Drills**
 - Parts of the Drill Press
 - Shape of Standard Drill Bit 7.3 Types
 - Angles
 - Drill Point
 - Speeds
 - Feeds
 - Counter Sinking
 - Counter Boring
 - Drilling Thin Plate
 - Safety
- 7. Reamers**
 - Long Fluted Machine Reamer
 - Machine Chucking Reamer
 - Taper Reamers
 - Adjustable Reamers
 - Counter Boring
 - Spot Facing
 - Counter Sinking
- 8. Taps and Dies**
 - Taps
 - Drilling Hole Before Tapping
 - Sizes
 - Wrenches
 - Uses in Order
 - Stock and Die
 - Review Questions #
 - Tapping
 - External Threading
 - Die Boxes